



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,077	10/30/2001	Ryo Takajitsuko	FUJI 19.117	9877
26304	7590	10/14/2005		
KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER AHMED, SALMAN	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/020,077		TAKAJITSUKO ET AL.	
	Examiner		Art Unit	
	Salman Ahmed		2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23, 26, 27 and 30 is/are rejected.
- 7) ☒ Claim(s) 24, 25, 28, 29 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 4 recites the limitation "the processor" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 does not mention the word "processor" as described in claim 4.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Art Unit: 2666

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Gohara et al. (US PAT 5159591), hereinafter referred to as Gohara.

A communications apparatus for switching among different interfaces and comprising a switch unit (figure 1 element 1), the switch unit comprising: a main switch (figure 1 element 3) for switching data of a fixed length (column 1 lines 18-19, fixed-length packets); and an interface having a first buffer for an input of the main switch (figure 1 element 21) and a second buffer for an output of the main switch (figure 1 element 41).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2666

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2, 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gohara, in view of Zheng (US PAT 5392280).

In regards to claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 30 Gohara teaches a switching unit having main switch and buffers as described in the rejections of claim 1 above.

In regards to claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 30 Gohara does not explicitly teach a processor that is connected to the switch unit and processes data according to a predetermined protocol, the processor having a third buffer and a fourth buffer connected to the first buffer and the second buffer. the processor performing back pressure control on the third buffer when the first buffer assumes a predetermined state, performing back pressure control on the first buffer when the fourth buffer assumes a predetermined state, performs back pressure control on the first buffer when the second buffer assumes a predetermined state and performing back pressure control on the fourth buffer when receiving a request for back pressure control from an apparatus that is connected to the processor, wherein the back pressure control request is formed by a predetermined flow control cell and by predetermined Quality of Service (QoS) class units. In regards to claims 13, 14, 15, 16

Art Unit: 2666

Gohara does not explicitly teach back pressure control is performed in circuit units. In regards to claims 17, 18, 19 Gohara does not explicitly teach predetermined state is determined at predetermined QOS class units. In regards to claims 20, 21, 22 Gohara does not explicitly teach the predetermined state is determined at circuit units. In regards to claim 23 Gohara does not explicitly teach the processor has a local switch that supplies data received from the switch unit to an internal buffer corresponding to the appropriate circuit. In regards to claim 27 Gohara does not explicitly teach plurality of switching units.

In regards to claims 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 30 Zheng teaches (Column 5 lines 36-50) FIG. 1, an upstream ATM switch 10 is coupled to a downstream ATM switch 12. Switch 10 has a number of incoming links 14 and a number of outgoing links 16, with one of the outgoing links 18 coupled to switch 12 as an incoming link. Switch 12 has a number of outgoing links 20 to which data on link 18 may be selectively switched. Switch 12 incorporates a buffer 22 which is utilized to store incoming data and to route it to one or more outgoing links. Within switch 10 is a buffer 24 adapted to store incoming data from various incoming links through connections to cell queues. Zheng teaches (column 10 lines 33-35) a simple link-by-link feedback flow control scheme is used to enable or disable asynchronous transmissions of a node during upstream congestion. In regards to claims 6, 7 and 8 Zheng teaches (column 7 lines 21-26) the F-bit from the downstream switch is checked at a decision block 112 which either allows transmission of a cell or the transmission of an idle cell which is equivalent to blocking the transmission of data

Art Unit: 2666

to the downstream switch. In regards to claims 9, 10, 11, 12 Zheng teaches (column 6 lines 20-25) the status of buffer occupation at switch 12 is provided by a so-called F-bit which is coupled to an asynchronous transmission controller 52 which interrupts or inhibits the asynchronous transmission of data to switch 12 if there is insufficient buffer space at this downstream switch. In regards to claims 13, 14, 15, 16 Zheng teaches (column 10 line 33) link-by-link feedback flow control. In regards to claims 17, 18, 19 Zheng teaches (column 13 lines 54-59) that with a timed-round-robin cell transmission scheme, each connection is guaranteed a certain amount of minimum bandwidth and no connections will be blocked completely. Thus one can use a per-link feedback control scheme, which treats all connections over a link as a single one. In regards to claims 20, 21, 22 Zheng teaches (column 13 lines 62-66) the usage of just 1 bit in a feedback cell to indicate the current buffer occupation state at a downstream node. . In regards to claim 23 Zheng teaches (column 5 lines 46-49) within switch 10 is a buffer 24 adapted to store incoming data from various incoming links through connections to cell queues 26, 28, and 30 accomplished by conventional switching.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gohara's teaching by incorporating Zheng's teaching of using a connected processor to implement feedback based flow control scheme in buffers. The motivation (as taught by Zheng, column 3 lines 35-38) is that the feedback flow control mechanism ensures that no cells will get lost by disabling asynchronous transmission at an upstream node when there is not enough buffer space at a downstream node.

6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohara, in view of Kobayashi et al. (US PAT PUB 2003/0179712), hereinafter referred to as Kobayashi.

In regards to claim 26 Gohara teaches a switching unit having main switch and buffers as described in the rejections of claim 1 above.

In regards to claim 26 Gohara does not explicitly teach the switch unit being multiplexed; and a working system receiving a back pressure control request from a passive system discards that back pressure control request.

In regards to claim 26 Kobayashi teaches switch unit (figure 64) being multiplexed and (page 51 section 2203) the communications data from the BSGCSH to the DS3-SMDS interface is transmitted to the ASSWSHs of both active and standby systems, and the DS3-SMDS interface selects only the communications data transmitted through the ASSWSH of the active system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gohara's teaching by incorporating a multiplex switching unit having capability of discarding cells received from passive unit as taught by Kobayashi. The motivation is that it is known in the art to implement redundant systems for reliability and therefore discarding messages (as taught by Kobayashi, page 51 section 2203) from the redundant standby or passive systems.

Allowable Subject Matter

7. Claim 24, 25, 28, 29, 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. Prior art pertinent to the application but not used in office action:

- US 20020107908 A1 US-PGPUB QoS monitoring system
and method for a high-speed diffserv-capable network element
Dharanikota, Sudheer
- US 5991266 A USPAT Queue length based ABR flow
control system Zheng; Qin
- US 6092115 A USPAT Method for supporting per-
connection queuing for feedback-controlled traffic Choudhury; Abhijit
Kumar et al.
- US 6341313 B1 USPAT Flow controlling method and
apparatus for network between processors Kanoh; Yasushi
- US 6442172 B1 USPAT Input buffering and queue status-
based output control for a digital traffic switch Wallner; John D. et al.
- US 5748629 A USPAT Allocated and dynamic bandwidth
management Caldara; Stephen A. et al.

Art Unit: 2666

- US 5790770 A USPAT Method and apparatus for
reducing information loss in a communications network McClure;
Robert B. et al.
- US 5978359 A USPAT Allocated and dynamic switch
flow control Caldara; Stephen A. et al.
- US 5982776 A USPAT Multipoint-to-point arbitration in a
network switch Manning; Thomas A. et al.
- US 6947413 B2 USPAT Switching apparatus,
communication apparatus, and communication system
Wakabayashi; Tetsuaki et al.
- US 5910955 A USPAT Switching hub capable of
controlling communication quality in LAN Nishimura; Takashi et al.
- US 6301253 B1 USPAT ATM cell buffer circuit and priority
order allocating method at ATM switching system Ichikawa; Ken
- US 4837761 A USPAT Header driven type packet
switching system Isono; Osamu et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

Art Unit: 2666

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA

DANG TON
PRIMARY EXAMINER